File

September 25, 1985

MEMO TO FILE

SUBJECT: New York State Radioactive Material License 210-0090
Cesium 137 Sealed Source (Industrial Nucleonics Corporation), Model No. S6, 100 millicuries (2 sources of 50 millicuries each), Holder Model No. LS101

Industrial Nucleonics is now Accuray, 500 Ackerman Road, Columbus, Ohio 43202, Phone No. (614)/261-2000

I contacted Patty Hoke of Accuray Specialty Products Division, who directed me to Don Stephens, Health Physics of Accuray. Mr. Stephens had a record of all sources that Nucleonics had sold us which included the two cesium 137 sources as well as four radium 226 sources. The radium sources were disposed of by E. W. Schustic at a disposal site in 1972 according to a letter in their files.

Mr. Stephens said Nuclear Research Corporation, 125 Titus Avenue, Warrington, Pennsylvania 18976, Phone No. (215)/343-5900 are now receiving sources to be disposed of. He further said that they (Accuray) would take care of having the sources properly crated, identified with the proper radioactive labels and the area wipe tested if we desired. I indicated that we would require this service and he promised to have Mr. Fred Sangers of the Special Products Division contact me. He further informed me that the travel expenses associated with this service would probably be minimal because they use an agent who resides within 50-miles of Niagara Falls. He further stated that if we could arrange to have the carrier that would transport the sources to Warrington available at that time the agent would sign all the necessary papers documenting that the proper procedures had been followed. He then suggested that I call Mr Peter Hatsiz at Nuclear Research Corporation to let them know that we were planning to send them the two cesium sources.

On September 24, 1985 I contacted Peter Hatsiz as directed. He asked me to let them know when the sources would be shipped; a purchase order would be required at that time. He said that if we desired we could purchase crates for $75.00 from them for shipping the sources; a disposal charge of $125.00 is required for each source.

DJH

D. J. Hansen

243m/

September 25, 1985

Called Columbus Scientific Industries Corporation, P. O. Box 9908, Austin, Texas, Phone No. (512)/258-5191 and spoke to Mr. John Rhodes, Radiation Safety Officer about two X-ray Fluorescent Analyzers (Portable Isotope Analyzers) with four sources - Cadmium 109 - 3 millicuries; Iron 55 - 20 millicuries; Cobalt 57 - 1 millicurie and Plutonium 238 - 30 millicuries.

He stated that:

a) we could read the manual that came with the analyzers and it should tell us who to contact in regard to disposing of these sources.

b) we could call the appropriate New York State Agency (NRC) and find out what to do with these sources and who locally would be able to dispose of them.

c) we could call him back with the date that these sources were acquired and he would work up a quotation (approximately $500 per source) except for the plutonium 238 which would create a problem such as having to be transported in an air tight container by surface only with proper identification, papers etc.

d) we could contact the manufacturer of these sources (Amerchand, Chicago, Illinois, Phone No. 800-323-6695) and perhaps they could assist us in this endeavor.

He further stated that New York State NRC should be able to answer all our questions on how to dispose of these sources.

Mary Ann Undercofler
234m

September 25, 1985

Contacted Len Hendrickson at Amerchand, Chicago, Illinois, 800/323-6695 and told him that John Rhodes of Columbus Scientific Industries Corporation suggested we contact them since they made the sources for our portable ispotope analyzers.

He informed me that they were in the process of setting up an organization to receive or take back radioactive sources and that he would contact me within a week to let me know the details.

However he implied that they might not take back the plutonium 238 but he did say the decision would be made before the end of the week on the plutonium source. When I inquired as to how we could dispose of the plutonium source he suggested I contact Chemical Nuclear Systems in South Carolina, 803/256-0450 who apparently have a connection with Barnwell.

D. J. Hansen

243m/

September 26, 1985

Received phone call from Fred Sanger, Specialty Products Division, Accuray. We agreed that they would send in a representative the week of October 14 to package and tag the two cesium 137 sources. We will have to provide personnel to disconnect the source from the shaft furnace and provide proper packaging for the sources. The latter could consist of a wooden pallet to which the source and holder could be affixed and covered. The covering could be cardboard. He will call prior to the week of the 14th for final arrangements. I am to provide them with a purchase order when the arrive.

October 2, 1985

Contacted Mr. Robert Kelley of the New York State Department of Labor, Occupational Health, Buffalo, NY 716/847-7140 to ask about disposing of the radioactive sources that the manufacturers would not accept. He gave me the names of the following organizations that possible could help. The included:

1. Alma Nuclear (Mike Komorek), 716/883-9164
2. Nuclear Diagnostics, Lower South Road, Peekskill, NY, (Allen Jones), 914/737-7330.
3. Teledyne, Westwood, NJ

I called Allen Jones of Nuclear Diagnostics and told him that I was having difficulty disposing of the following radioactive materials. These included plutonium 238 sealed source, 30 millicuries, an unknown source and quantity of uranium, some thoria crucibles, one bottle of thorium nitrate and one bottle of thorium oxide. He informed me there would be no problem getting rid of the the thorium materials. They have just received permission to utilize a disposal site for radium provided it is not in excess of 30 millicuries. He will send me the information by mail on what is required for radium disposal. In order to estimate the quantity of radium that we have it will be necessary to expose the source in an open area and measure the radiation with a Gieger Counter at a distance of one (1) meter. Because we do not know the quantity of radium in our possession he recommended that we use a qualified person to do this (our Radiation Safety Officer for example.)

The real problem exists with the plutonium sealed source because it is 30 millicuries. Currently there is a law that prohibits disposal of this material anywhere. He is not certain how to proceed but discussed exceptions on disposal. For example, if the waste products are less than 10 nanocuries per gram, then it is possible that it can be disposed of in certain approved locations. However, the tests necessary to identify the waste products and their radioactivity could cost as much as $50,000. The other alternative if permission can be granted is to have it okayed to store in a special container. Right now the containers are used for nuclear power plant waste but the law prohibits or does not cover the sealed source plutonium. This container costs $800. He suggested that I write him a letter containing all the pertinent information we have on the plutonium source and he will attempt to see if he can find a way of disposing of it.

It is advantages to dispose of the source at the same time as the thorium, radium and hopefully plutonium since there is a transportation charge to transport the material from Niagara Falls to Peekskill.

I asked him if it would be feasible for us to sell, give or whatever, the source contained in a portable isotope analyzer as a means of getting it off our hands and he said that this is a viable method.

October 17, 1985

Called a Mr. Jim Buchenberger of Amerchand Corporation, Chicago, Illinois in reference to the return of the four portable isotope analyzer sources. I informed him that the quotation he had sent me on September 30, which I received October 4, was satisfactory and that a Purchase Order Number 615-301926 has been issued and will be mailed to him today. I requested that he expedite the sending of the packaging materials we will need to transport the sources to them. He said that this action would be started today and that we should have the material in about one week.

80-0812	A. Gonas	10/17/85		NO. 615-301926

APPROVED BY - SIGNATURE	TO BE USED FOR		
APPROVED BY-PRINT OR TYPE NAME / DATE	LAST P O NUMBER	DATE WANTED	
D.J. Hansen 10/17/85			

THIS ORDER NOT BINDING UNLESS UCC VALIDATION APPEARS →

UNION CARBIDE CORPORATION
METALS DIVISION
137-47th St., P. O. Box 66
Niagara Falls, New York 14302
HEREINAFTER CALLED BUYER

PAGE 1 OF 1

VENDOR

Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005

HEREINAFTER CALLED SELLER

MAIL INVOICE IN DUPLICATE TO

Marietta, Ohio 45750
P. O. Box 178
Metals Division

ADDRESS CORRESPONDENCE TO:
P.O. BOX 66, NIAGARA FALLS, NEW YORK 14302

SHIP TO

Umetco Minerals Corporation
137 - 47th Street
Niagara Falls, NY 14302

005307

BUYER HEREBY ORDERS UPON THE TERMS HEREIN CONTAINED INCLUDING THE ADDITIONAL TERMS ON THE REVERSE SIDE HEREOF

TERMS OF PAYMENT						TRANSPORTATION TERMS			FOB POINT		
SHIP TO ARRIVE BY	NET 30	% DISC	10 DAYS	10TH PROX	OTHER	PREPAID		OTHER	SHIP POINT	DEST	OTHER
AS DIRECTED						ACCT OF BUYER 1	ACCT OF SELLER 2	3	1	2	3

USE SALES TAX TO STATE/LOCAL TAX OR USE TAX	TAX %	TEXAS SEE SPECIAL INSTRUCTIONS	TAX EXEMPTION NO	SHIP VIA	ARREL OR	TRUCK	UPS	RAIL	AIR FRT	OTHER (SPECIFY ROUTING)	BUYER	COM CODE	VENDOR CODE	REC LOC
YES NO		☐									504			615

ITEM NO	QUANTITY RECEIVED	X	C	A	QUANTITY ORDERED	U/M	DESCRIPTION	UNIT PRICE	STORES ACCOUNT	MATERIAL CODE ACCOUNT	MATERIAL CODE SUB	FIRST NO	SECOND NO	SHOP ORDER
							This order is written to cover costs associated with return of radioactive sources purchased from Seller for use or disposal at Seller's option.							
1.					2	EA	CD-109 and Fe-55 source	$ 100.00						
2.					1	EA	CO-57 source	50.00						
3.					1	EA	PU-source	1500.00						
4.					1	EA	Packaging material for transfer of sources	75.00						

REQUISITIONER'S DESCRIPTION (17) CHARACTER LIMITATION

PURCHASING AGENT'S NAME L.G. Evans
TYPE OR PRINT NAME

LOT RR NO	DATE REC'D	C&F	REC'D BY	REC LOC	ORIGIN IN CITY	ORIGIN IN CO	ORIGIN IN STATE	ORIGIN OUT STATE	TRANS PPD	TRANS COL	TRANS CHARGE	CARRIER	DATE OF PRO	PRO NO	CAR NO	CONTAIN COUNT	PRODUCT WEIGHT	TOTAL WEIGHT	PRODUCT CLASS

MM-334-150

UCCNHT0003596

October 17, 1985

On October 16, 1985 Mr. Chuck Kolodjeski of Accuray arrived to package the two cesium-137 sources. The sources were strapped to a 3' x 3' pallet, encased in lead and covered with a pallet box. He then performed a radiological survey 36" from the surface of the container. The container was then labeled with the appropriate yellow radioactive identification label, one on each side. A common carrier, ARA Smith Motor Corporation of Buffalo, NY was recommended for transporting the sources to Nuclear Research in Warrington, PA.

Purchase Order No. 615-301935 was issued to Accuray for services performed, Purchase Order No. 615- 301927 was issued to Nuclear Research for disposal of the sources and ARA Smith Motor Corporation was prepaid for transporting the sources to Warrington, PA.

Called Mr. Hatsiz of Nuclear Research Corporation to let them know that the two cesium sources were leaving Niagara Falls today, October 17, 1985, via ARA Smith Motor Corporation I gave him our address and requested that he forward to us the proper papers indicating that the sources had been received by them for disposal. He confirmed that the disposal price would be $125 00 for each source.

TRANSFER SHEET

☐ CONTROL OFFICE
☐ RECEIVING DEPT _____
☐ ORIGINATING DEPT _____

PLANT	ID	DATE			CHARGE	REFERENCE	BS LOC	INV ACT
		MONTH	DAY	YEAR				
615	42	10	16	82	25	08910		
CARD COLUMNS → 1 3	4 - 5	6		11	12 16	17 21	22 24	25 27

DESCRIPTION MK2 Rx

	DEPT	LOCATION	LOT	PROD CODE	SIZE	PKG	QUANTITY	NO PKGS	WT PER PKG
FROM	6108	145		072235	MK2 Rx		1		
To	69	Building			MK2 Rx		1		
CARD COLUMNS →	29 31	32 35	36 40	41 46	47-49	50-51	52 61	62 66	67 76

DETAIL

SKIP NUMBER / OR	PACKAGES NUMBER	PACKAGES WT EACH	WEIGHT GROSS	WEIGHT TARE	WEIGHT NET	REMARKS
	MK2 Rx					
	GM Engr					
	10/16/82					
	For					
	Dr. D.D. Hendrix					

CHECKED BY

UCCNHT0003598

STRAIGHT BILL OF LADING — SHORT FORM — ORIGINAL — Not Negotiable

SMITH TRANSFER
Name of Carrier

Carrier's No _____

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading

AT NIAGARA FALLS, N Y OCT 17 ,19 85 From UMETCO MINERALS CORPORATION

the property described below in apparent good order except as noted (contents and condition of contents of packages unknown) marked consigned and destined as indicated below which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route otherwise to deliver to another carrier on the route to said destination It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official Southern Western and Illinois Freight Classifications in effect on the date hereof if this is a rail or a rail water shipment or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading including those on the back thereof set forth in the classification or tariff which governs the transportation of this shipment and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns

SHIPPER'S ORDER NO	CUSTOMER'S ORDER NO

Consigned to NUCLEAR RESEARCH CORPORATION
125 TITUS AVENUE
Destination WARRINGTON, PA State PA County _____
Route RADIOACTIVE SOURCE
Delivering Carrier ATTN.: PETER HERTSIZ Car or Vehicle Initials _____ No _____ Seal No _____

No Packages	Kind of Package Description of Articles, Special marks, and Exceptions	*Weight (Subject to correction)	‡Class or Rate	Check Column
	BIN LEVELING DEVICE WHICH CONTAINS			
	A RADIOACTIVE SOURCE N O S	560#		
	(2 EACH OF CE137)			
	UN-2982			
	THIS MATERIAL PACKED BY THE MANUFACTURER			
	NOTE TO CARRIER			
	Forward duplicate freight bills to UMETCO MINERALS CORPORATION PO Box 66 137—47th Street Niagara Falls N Y			

Subject to Section 7 of Conditions of applicable bill of lading if this shipment is to be delivered to the consignee without recourse on the consignor the consignor shall sign the following statement

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges

(Signature of consignor)

If charges are to be prepaid write or stamp here To be Prepaid.

PREPAID

Received $ _____

to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____
(The signature here acknowledges only the amount prepaid)

Charges advanced

RADIOACTIVE MATERIAL, ~~SPECIAL FORM~~, N O.S., ~~UN2974~~, UN2982
SEALED SOURCE, 0.1 CURIES, ISOTOPE CS-137
RADIOACTIVE YELLOW II LABEL
TRANSPORT INDEX 0.4, PACKAGE TYPE A

This is to certify that the above named materials are properly classified described packaged marked and labeled, and are in proper condition for transportation according to the applicable regulations of the U S Department of Transportation This shipment is within the limitations prescribed for private carrier by motor vehicle

* If the shipment moves between two ports by a carrier by water the law requires that the bill of lading shall state whether it is carrier's or shipper's weight.

† This is to certify that the above articles are properly described by name and are packed, marked and labeled, and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission.

‡ The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Rule 41 of the Uniform Freight Classification

If the rates under Item 33800 of the Uniform Freight Classification No charge the agreed or declared value of the property for transportation

† Shipper's imprint in lieu of stamp not a part of bill of lading approved

NOTE—Where the rate is dependent on value shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated

BF-1282 (4-23-83)

UMETCO MINERALS
Shipper

Per CAROL A. U'REN

Permanent postoffice address of shipper
UC 326-34

SIGNATURE

Per _____ Agent

Per _____

FORM EMC 1004-R L
Printed in U S A

SHIPPING MEMORANDUM

ORIGINATING CARRIER: SMITH TRANSFER

FILE NUMBER:

DATE SHIPPED: OCT 17,1985

FOB O/T SHIPPING POINT:

Umetco Minerals Corporation

PO BOX 66 137 47th STREET • NIAGARA FALLS NEW YORK 14302

REQUIREMENT CARD NO:

CUSTOMER S ORDER NO:

CONSIGNED TO: RECORD NO:

NUCLEAR RESEARCH CORPORATION
125 TITUS AVENUE
WARRINGTON, PA 18976

ATTN.. PETER HERTSIZ

SHIPPING LOC NO	PRODUCT CODE	SIZE CODE	CONT CODE
615			
CHARGE	**SHIPPING STW NO**	**REC STW NO**	**MODE OF SHIP**

ROUTE:

SEAL NO:

DEPT SHIPPING: 169 BLDG.

GATE NO:

DELIVERING CARRIER:

VEHICLE INITIALS NUMBER:

NO OF PKGS	BILL OF LADING DESCRIPTION	WEIGHT	CLASS/RATE	CHECK	PREPAID STAMP
	BIN LEVELING DEVICE WHICH CONTAINS A RADIOACTIVE SOURCE (2 EACH OF CE137)	560#			PREPAID
					AMOUNT $

LOT NUMBER	NO OF PKGS	TOTAL WEIGHT IN POUNDS GROSS	TARE	NET	CHEMICAL ANALYSIS
		560			

PKG NO	INDIVIDUAL WEIGHTS IN POUNDS GROSS	TARE	NET	PKG NO	INDIVIDUAL WEIGHTS IN POUNDS GROSS	TARE	NET
	PACKED BY THE MANUFACTURER						
	REQUESTED BY: D J.HANSEN						

RADIOACTIVE MATERIAL, ~~SPECIAL FORM~~, N.O S., ~~UN2974~~, UN2982
SEALED SOURCE, 0.1 CURIES, ISOTOPE CS-137
RADIOACTIVE YELLOW II LABEL
TRANSPORT INDEX 0.4, PACKAGE TYPE A

This is to certify that the above named materials are properly classified described packaged marked and labeled, and are in proper condition for transportation according to the applicable regulations of the U S Department of Transportation This shipment is within the limitations prescribed for cargo-only aircraft

SIGNATURE

BF-1282 (4-23-83)

UCCNHT0003600

October 21, 1985

Re: Radium Sources Stored in a 1-1/2' D x 1-1/2' L Steel Cylinder

On Friday, October 18 we opened the steel cylinder and found that a lead cylinder surrounded by sand was inside. When the top of the lead cylinder was removed (the cylinder was approximately 2" thick) we found it contained a small paper envelope which we assumed was the radium that was removed from the safe in Building 94. It also contained what looked like a pipe nipple. The nipple appeared to be more radioactive. At this point we discontinued our investigation and called Adam Malik of Linde Tonawanda who is our interim Radioactive Officer. He suggested we measure the radiation from different distances from the sources which he could then compare to a know source in order to determine the quantity of radioactive material we have.

The envelope was removed first using a set of tongs to avoid getting too close to the source and was placed on a piece of paper on the floor where the following measurements were made with the Thyac III Victoreen Gieger Counter, Model No. 489-35, Serial No. 3407.

Distance from Source	Reading
1 meter	0.2 millirems/hour
50 centimeters	0.4 millirems/hour
10 centimeters	3.5 millirems/hour

The pipe source was removed and was found to have writing on the outside which identified it as an alphatron gauge. The radioactivity was measured to be as follows:

Distance from Source	Reading
1 meter	0.4 millirems/hour
50 centimeters	1.7 millirems/hour
10 centimeters	50.0 millirems/hour

The reading on the gauge was read from a distance with a cathetometer. Part of the label was missing but the following information was still visible:

National Research Corporation, Alphatron Gauge, 0.05 r-8/hrs at 1 foot. Use and store in a well ventilated room. This gauge contains less than 500 micrograms of radium. Read instructions carefully. Gamma radiation not over 0.05 r-8/hrs at 1 foot (Patents - ? - Serial No. 2497213).

D. J. Hansen